Chemical Safety Data Sheet MSDS / SDS

N,N-diethyl-m-toluamide SDS

Revision Date:2024-04-25 Revision Number:1

SECTION 1: Identification of the substance/mixture and of the company/undertaking

Product identifier

Product name: N,N-diethyl-m-toluamide

CAS: 134-62-3

Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses: For R&D use only. Not for medicinal, household or other use.

Uses advised against: none

Company Identification

Company: Chemicalbook.in

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SECTION 2: Hazards identification

Classification of the substance or mixture

Acute toxicity - Category 4, Oral
Skin irritation, Category 2

Eye irritation, Category 2
Hazardous to the aquatic environment, long-term (Chronic) - Category Chronic 3

GHS label elements, including precautionary statements

Pictogram(s)

Signal word Warning

Hazard statement(s)

H302 Harmful if swallowed
H315 Causes skin irritation
H319 Causes serious eye irritation
H412 Harmful to aquatic life with long lasting effects

Precautionary statement(s)

Prevention

P264 Wash ... thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/...
P273 Avoid release to the environment.

Response

P301+P317 IF SWALLOWED: Get medical help.
P330 Rinse mouth.
P302+P352 IF ON SKIN: Wash with plenty of water/...
P321 Specific treatment (see ... on this label).
P332+P317 If skin irritation occurs: Get medical help.
P362+P364 Take off contaminated clothing and wash it before reuse.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Storage

none

Disposal

P501 Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and

regulations, and product characteristics at time of disposal.

Other hazards which do not result in classification

no data available

SECTION 3: Composition/information on ingredients

Substance

Chemical name:	N,N-diethyl-m-toluamide
Common names and synonyms:	N,N-diethyl-m-toluamide
CAS number:	134-62-3
EC number:	205-149-7
Concentration:	100%

SECTION 4: First aid measures

Description of necessary first-aid measures

If inhaled

Fresh air, rest. Half-upright position. Artificial respiration may be needed. Refer for medical attention.

Following skin contact

First rinse with plenty of water for at least 15 minutes, then remove contaminated clothes and rinse again. Refer for medical attention .

Following eye contact

First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then refer for medical attention.

Following ingestion

Rinse mouth. Do NOT induce vomiting. Rest. Refer for medical attention .

Most important symptoms/effects, acute and delayed

SYMPTOMS: Symptoms of exposure to this compound may include eye and mucous membrane irritation. It can cause contact dermatitis, conjunctivitis, exacerbation of seborrhea and acne vulgaris. Eye contact may result in a smarting sensation. Ingestion of this material can cause central nervous system disturbances. Symptoms resulting from exposure to this compound include disorientation, staggering gait, slurred speech, crying out, episodes consisting of stiffening into a sitting position, extending of extremities, flexing of the fingers and dorsiflexing the toes. It may also cause jaundice, aplastic anemia, bleeding, convulsive seizure or death. It may irritate tender areas of the skin. It may also cause severe eye injury. Other symptoms are desquamation about the nose, dryness of face, a slight tingling sensation and a bullous eruption in the antecubital fossae. Irritation of the gastro-intestinal tract and coma are possible. It may cause purpuric or ecchymotic areas. ACUTE/CHRONIC HAZARDS: This compound is irritating to the skin, eyes and mucous membranes. When heated to decomposition it emits toxic fumes of carbon monoxide, carbon dioxide and nitrogen oxides. It may be harmful by inhalation or ingestion. (NTP, 1992)

Indication of immediate medical attention and special treatment needed, if necessary

Decontaminate the skin with soap and water . Eye contamination should be removed by prolonged flushing of the eye with copious amounts of clean water or saline. If irritation persists, specialized medical treatment should be obtained. Topical steroids and oral antihistamines have been used for severe skin reactions that occasionally follow application of DEET.

SECTION 5: Firefighting measures

Suitable extinguishing media

Suitable extinguishing media: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Specific hazards arising from the chemical

This chemical is combustible. (NTP, 1992)

Special protective actions for fire-fighters

Wear self-contained breathing apparatus for firefighting if necessary.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Avoid dust formation. Avoid breathing mist, gas or vapours.Avoid contacting with skin and eye. Use personal protective equipment.Wear chemical impermeable gloves. Ensure adequate ventilation.Remove all sources of ignition. Evacuate personnel to safe areas.Keep people away from and upwind of spill/leak.

Environmental precautions

Ventilation. Collect leaking and spilled liquid in sealable containers as far as possible. Absorb remaining liquid in sand or inert absorbent. Then store and dispose of according to local regulations. Personal protection: complete protective clothing including self-contained breathing apparatus.

Methods and materials for containment and cleaning up

ACCIDENTAL RELEASE MEASURES: Personal precautions, protective equipment and emergency procedures: Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Environmental precautions: Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided. Methods and materials for containment and cleaning up: Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

SECTION 7: Handling and storage

Precautions for safe handling

Handling in a well ventilated place. Wear suitable protective clothing. Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Use non-sparking tools. Prevent fire caused by electrostatic discharge steam.

Conditions for safe storage, including any incompatibilities

Separated from strong oxidants, acids, organic nitro compounds and food and feedstuffs. Keep in a well-ventilated room.Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

SECTION 8: Exposure controls/personal protection

Control parameters

Occupational Exposure limit values

no data available

Biological limit values

no data available

Appropriate engineering controls

Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Set up emergency exits and the risk-elimination area.

Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection

Wear tightly fitting safety goggles with side-shields conforming to EN 166(EU) or NIOSH (US).

Skin protection

Wear fire/flame resistant and impervious clothing. Handle with gloves. Gloves must be inspected prior to use. Wash and dry hands. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

Respiratory protection

If the exposure limits are exceeded, irritation or other symptoms are experienced, use a full-face respirator.

Thermal hazards

no data available

SECTION 9: Physical and chemical properties and safety characteristics

Physical state:	PHYSICAL DESCRIPTION: Clear colorless or faintly yellow slightly viscous liquid. Faint pleasant odor. (NTP, 1992)
Colour:	Nearly colorless to amberlike liquid
Odour:	Faint, characteristic odor
Melting point/freezing point:	197°C(lit.)
Boiling point or initial boiling point and boiling range:	160°C/19mmHg(lit.)
Flammability:	Combustible. Gives off irritating or toxic fumes (or gases) in a fire.

Lower and upper explosion limit/flammability limit:	no data available
Flash point:	140°C(lit.)
Auto-ignition temperature:	358°C
Decomposition temperature:	no data available
pH:	no data available
Kinematic viscosity:	13.3 cP at 30 deg C
Solubility:	19.6 [ug/mL]
Partition coefficient n-octanol/water:	log Kow = 2.02
Vapour pressure:	<0.01 mm Hg (25 °C)
Density and/or relative density:	0.9955
Relative vapour density:	6.7 (vs air)
Particle characteristics:	no data available

SECTION 10: Stability and reactivity

Reactivity

Decomposes on burning. This produces toxic and corrosive gases including nitrogen oxides. The solution in water is a strong base. It reacts violently with acid and is corrosive. Reacts violently with oxidants, nitric acid and organic nitro compounds. Attacks many metals in the presence of water.

Chemical stability

Stable under recommended storage conditions.

Possibility of hazardous reactions

The vapour is heavier than air.N,N-DIETHYL-M-TOLUAMIDE is incompatible with strong acids, strong bases and strong oxidizing agents. It hydrolyzes slowly in the presence of water. It has a solvent effect on most plastics, paints, and varnishes. It is also incompatible with rayon, acetate or dynel clothing. (NTP, 1992)

Conditions to avoid

no data available

Incompatible materials

Incompatible materials: Strong oxidizing agents, strong acids, strong bases, strong reducing agents

Hazardous decomposition products

When heated to decomposition it emits toxic fumes of /nitrogen oxides/.

SECTION 11: Toxicological information

Acute toxicity

Oral: LD50 Rat oral 1892 mg/kg

Inhalation: LC50 Rat inhalation >4100 mg/cu m/4 hr

Dermal: no data available

Skin corrosion/irritation

no data available

Serious eye damage/irritation

no data available

Respiratory or skin sensitization

no data available

Germ cell mutagenicity

no data available

Carcinogenicity

EPA: Not classifiable as to human carcinogenicity. IARC: Not evaluated. NTP: Not evaluated

Reproductive toxicity

no data available

STOT-single exposure

no data available

STOT-repeated exposure

no data available

Aspiration hazard

no data available

SECTION 12: Ecological information

Toxicity

Toxicity to fish: LC50; Species: Pimephales promelas (fathead minnow); Conditions: freshwater, flow through, 25 deg C, pH 7.3, hardness 45.0 mg/L CaCO3, alkalinity 47.0 mg/L CaCO3, dissolved oxygen 6.1 mg/L; Concentration: 110000 ug/L for 96 hr (95% confidence interval: 106000-114000 ug/L) /98% purity

Toxicity to daphnia and other aquatic invertebrates: EC50; Species: Daphnia magna (Water Flea) age <24 hr neonate; Conditions: freshwater, renewal, 19.4-20.3 deg C, pH 8.2-8.6, hardness 134-136 mg/L CaCO3, alkalinity 179-182 mg/L CaCO3, dissolved oxygen > or =7.7 mg/L; Concentration: 24000 ug/L for 21 days (95% confidence interval: 21000-27000 ug/L); Effect: reproduction, decreased progeny counts/numbers /98.68% purity

Toxicity to algae: no data available

Toxicity to microorganisms: no data available

Persistence and degradability

AEROBIC: DEET, present at 100 mg/L, did not biodegrade in 4 weeks using an activated sludge inoculum at 30 mg/L in the Japanese MITI(1). However, in a OECD 301B test DEET was shown to biodegrade 83.8% in 4 weeks using activated sewage sludge and measuring carbon dioxide produced(2). DEET reached 30% and 37% of the theoretical oxygen demand and chemical oxygen demand after 7 days in another test, but biodegradation seemed to halt after reaching 40 and 48%, respectively(2). DEET was shown to biodegrade using Po River water, forming three transformation products(3). Pseudomonas putida DTB (isolated from activated sludge from a municipal wastewater treatment plant in Ithaca, NY) degraded DEET to 3-methylbenzoate and diethylamine under aerobic conditions(4).

Bioaccumulative potential

BCF values of <2.4 and 0.8-2.4 were measured using carp (Cyprinus carpio) which were exposed to 0.05 and 0.50 mg/L of DEET, respectively, over a 6-week period(1). According to a classification scheme(2), these BCF values suggest the potential for bioconcentration in aquatic organisms is low(SRC).

Mobility in soil

Using a structure estimation method based on molecular connectivity indices(1), the Koc of DEET can be estimated to be 115(SRC). According to a classification scheme(2), this estimated Koc value suggests that DEET is expected to have moderate mobility in soil.

Other adverse effects

no data available

SECTION 13: Disposal considerations

Disposal methods

Product

The material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing. Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.

Contaminated packaging

Containers can be triply rinsed (or equivalent) and offered for recycling or reconditioning. Alternatively, the packaging can be punctured to make it unusable for other purposes and then be disposed of in a sanitary landfill. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.

SECTION 14: Transport information

UN Number

ADR/RID: Not dangerous goods. (For reference only, please check.)
IMDG: Not dangerous goods. (For reference only, please check.)
IATA: Not dangerous goods. (For reference only, please check.)

UN Proper Shipping Name

ADR/RID: Not dangerous goods. (For reference only, please check.)
IMDG: Not dangerous goods. (For reference only, please check.)
IATA: Not dangerous goods. (For reference only, please check.)

Transport hazard class(es)

ADR/RID: Not dangerous goods. (For reference only, please check.)
IMDG: Not dangerous goods. (For reference only, please check.)
IATA: Not dangerous goods. (For reference only, please check.)

Packing group, if applicable

ADR/RID: Not dangerous goods. (For reference only, please check.)
IMDG: Not dangerous goods. (For reference only, please check.)
IATA: Not dangerous goods. (For reference only, please check.)

Environmental hazards

ADR/RID: No
IMDG: No
IATA: No

Special precautions for user

no data available

Transport in bulk according to IMO instruments

no data available

SECTION 15: Regulatory information

Safety, health and environmental regulations specific for the product in question

European Inventory of Existing Commercial Chemical Substances (EINECS)

Listed.

EC Inventory

Listed.

United States Toxic Substances Control Act (TSCA) Inventory

Listed.

China Catalog of Hazardous chemicals 2015

Not Listed.

New Zealand Inventory of Chemicals (NZIoC)

Listed.

(PICCS)

Listed.

Vietnam National Chemical Inventory

Listed.

IECSC)

Listed.

Korea Existing Chemicals List (KECL)

Listed.

SECTION 16: Other information

Abbreviations and acronyms

CAS: Chemical Abstracts Service

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road

RID: Regulation concerning the International Carriage of Dangerous Goods by Rail

IMDG: International Maritime Dangerous Goods

IATA: International Air Transportation Association

TWA: Time Weighted Average

STEL: Short term exposure limit

LC50: Lethal Concentration 50%

LD50: Lethal Dose 50%

EC50: Effective Concentration 50%

References

IPCS - The International Chemical Safety Cards (ICSC), website: http://www.ilo.org/dyn/icsc/showcard.home

HSDB - Hazardous Substances Data Bank, website: https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm

IARC - International Agency for Research on Cancer, website: http://www.iarc.fr/

eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website: http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en

CAMEO Chemicals, website: http://cameochemicals.noaa.gov/search/simple

ChemIDplus, website: http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp

ERG - Emergency Response Guidebook by U.S. Department of Transportation, website: http://www.phmsa.dot.gov/hazmat/library/erg

Germany GESTIS-database on hazard substance, website: http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp

ECHA - European Chemicals Agency, website: https://echa.europa.eu/